

quality of products and services. Price reductions which result from a competitive environment will be in the interest of consumers, unless the price reductions are predatory, supracompetitive, or otherwise involve disproportionate cost shifting to other customers. Thus, the FCC has long recognized that competition can constitute legal justification for discounts from prevailing tariff rates.

The doctrine of competitive necessity was first applied in telecommunications by the FCC to evaluate AT&T's TELPAK service,⁹ which was AT&T's response to the FCC's *Above 890* order.¹⁰ The *Above 890* order permitted large users of private lines to build microwave systems for their own use.

AT&T's TELPAK tariffs offered reduced rates on large bundles of private lines geared to large users who might otherwise build their own microwave systems. TELPAK was AT&T's way of addressing competition via strategic pricing. After a protracted proceeding in which several different fully distributed cost tests and associated rates of return were used to refute cross-subsidization allegations, the TELPAK tariffs were declared unlawful in 1976 and finally withdrawn in 1980.¹¹

Tariff No. 15, like TELPAK, entails special offerings of bulk discounts and thus raises issues of pricing and competitive necessity. However, legal commentators and economists today

9. TELPAK Service and Channels, 38 F.C.C. 370 (1964), *aff'd sub. nom. American Trucking Assoc. v. FCC*, 377 F.2d 121 (1966), *cert. denied*, 386 U.S. 943 (1967). The concept of competitive necessity had been implemented in other industries by regulators well in advance of the TELPAK investigation. For example, competition was recognized under the Interstate Commerce Act as justification for railway rates targeted to meet competition from trucking and water transport carriers. See *Eastern Cent. Motor Carriers Assoc. v. United States*, 321 U.S. 194 (1944); *Texas & Pac. Ry. v. United States*, 289 U.S. 627 (1933).

10. Allocation of Microwave Frequencies Above 890 MC., Report and Order, 27 F.C.C. 359, 18 R.R. 1767 (1959) (hereinafter "*Above 890*"). A private line is a telecommunications channel which is leased from a common carrier for the sole use of one or more specific customers between two or more specific points. For example, the hotel courtesy phones found in many airports, which allow the user to pick up the receiver and contact his hotel without even dialing, are simple private lines. Similarly, private alarm systems employ private lines to connect homes with home security companies.

11. The TELPAK story is discussed in detail in several sources. See, e.g., G. BROCK, *THE TELECOMMUNICATIONS MARKET: THE DYNAMICS OF MARKET STRUCTURE* 207-210 (1981); G. FAULHABER, *TELECOMMUNICATIONS IN TURMOIL: TECHNOLOGY AND PUBLIC POLICY* 24-31 (1987); L. JOHNSON, *COMPETITION AND CROSS-SUBSIDIZATION IN THE TELEPHONE INDUSTRY* (1982).

have better analytic tools to employ when addressing the issues of pricing and competitive necessity.¹² Under the tests developed after TELPAK, *Tariff No. 15* could be declared lawful.

In 1964, the FCC emphasized in the TELPAK proceedings that a price discount should be offered no more broadly than necessary to meet competition.¹³ Indeed, the FCC required a showing that customers would shift to the competing alternative, but for the discounted offering.¹⁴

In the 1970s, the FCC again recognized that competition can constitute legal justification for discounts from prevailing tariff rates. In *American Satellite Corporation*,¹⁵ the Commission reasoned that because a new competitive carrier needed to establish itself in a market, it could offer non-compensatory rates. Similarly, in *United States Transmission Systems*,¹⁶ a competitive carrier was allowed to offer bulk rate discounts since it did not provide monopoly-type services.

In the 1980s, the FCC decided that rates for private line

12. A great deal of research in the areas of industrial organization, regulatory economics, and antitrust has taken place since the initial filing of the TELPAK tariffs in 1959 and the subsequent proceedings. Cross-subsidization was first given a formal, rigorous definition in Faulhaber's pathbreaking article. See Faulhaber, *Cross-Subsidization: Pricing in Public Enterprises*, 65 AM. ECON. REV. 966 (1975). In 1975, the cost-based predation brightlines appeared in the literature, most notably the Areeda-Turner test for predatory pricing. Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975); see *infra* text accompanying note 27.

In 1981, the seminal article on the determinants of market power was written by Landes and Posner. Landes & Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937 (1981). In 1982, Baumol, Panzar, and Willig made significant additions to and unified the emerging literature on contestability. W. BAUMOL, J. PANZAR, & R. WILLIG, *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982). See *infra* text accompanying note 102.

Furthermore, recent predatory pricing cases have led analysts to look at predation and cross-subsidization in significantly different ways. See *infra* note 25 and accompanying text. All of these developments have yielded ways of evaluating the scenario in which a "dominant" carrier makes customer-specific offers. Hence, the *Tariff No. 15* Order need not be "TELPAK revisited," since there are now so many analytic tools to apply to this type of scenario.

13. TELPAK Service and Channels, 38 F.C.C. 370 (1964), *aff'd sub nom.* American Trucking Assoc. v. F.C.C., 377 F.2d 121 (1966), *cert. denied*, 386 U.S. 943 (1967).

14. Revisions of Tariff 260 (TELPAK), Memorandum Opinion and Order, 61 F.C.C.2d 587, 658-59, 38 R.R.2d 1121, 1205-06 (1976), *aff'd*, 70 F.C.C.2d 616 (1978), *aff'd in part sub nom.* Aeronautical Radio, Inc. v. FCC, 642 F.2d 1221 (D.C. Cir. 1980), *cert. denied*, 451 U.S. 920 (1981).

15. 55 F.C.C.2d 1 (1975).

16. 66 F.C.C.2d 1091 (1977).

and switched access services that are reasonably designed to meet competition are not discriminatory. For example, in 1984 in *Volume Discount Practices*,¹⁷ the FCC relaxed the requirement that a carrier demonstrate that customers would shift to competing alternatives but for a discounted offering. Instead, the FCC found that sellers should limit their offers of lower prices to the group of customers reasonably believed to have lower prices available to them from competitors. Even then, the Commission indicated that meeting competition on a customer-by-customer basis continued to be the discount justification least subject to challenge.¹⁸ The FCC stated:

For purposes of Section 202 of the Communications Act, a carrier may be able to meet its burden of proving a competitive-necessity justification for a lower rate without showing that each customer taking the discounted offering actually would switch to an equal or lower priced alternative.¹⁹

The Commission further stated that “[g]reater pricing flexibility in volume discounts may benefit large as well as small users, not injure competition, and not be discriminatory.”²⁰ The FCC ruled that under the competitive necessity doctrine, rates varying from established rates are lawful when:

- An equal or lower priced alternative is available to the customer,
- The terms of the offer are reasonably designed to meet competition, and
- The discounted rate contributes to reasonable rates and efficient services for all users.²¹

In *OCP Guidelines*,²² the Commission confirmed that discounts for switched services designed to meet competitors’ prices would be permitted, provided that the discounted offering satisfied the “net revenue test.”²³

17. *Private Line Rate and Volume Discounts*, Report and Order, 97 F.C.C.2d 923 (1984) [hereinafter *Volume Discount Practices*].

18. *Id.* at 948.

19. *Id.* at 947.

20. *Id.* at 948.

21. 97 F.C.C.2d 923, 947 (1984).

22. *OCP Guidelines*, *supra* note 7, at 42.954. The net revenue test defined in this order, its economic attributes, and its applicability to customer-specific offerings, cross-subsidization, and predatory pricing concerns are described in more detail, *infra*, Section II.

23. The net revenue test, cross-subsidization, and predatory pricing concerns are described in more detail, *infra*, Section II.

To date, the Commission has neither rejected nor modified the criteria set out in *Volume Discount Practices*.²⁴ Thus, the competitive necessity doctrine should be the appropriate means of evaluating the lawfulness of single customer offerings.

II. COST GUIDELINES AND THE FCC'S NET REVENUE TEST AS SAFEGUARDS AGAINST CROSS-SUBSIDIZATION AND PREDATORY PRICING

The FCC's net revenue test, as defined in the *OCP Guidelines*, should be applied as a regulatory tool to allow dominant carriers pricing flexibility while maintaining proper safeguards against cross-subsidization and predatory pricing.

It is often feared that pricing flexibility may be counter to the public interest because of the perceived danger that larger carriers will then cross-subsidize competitive services with revenues from customers of less competitive services. A related concern is that such pricing flexibility will lead to large carriers setting prices that are predatory and hence anticompetitive. The net revenue test can reasonably provide the safeguards required to prevent both cross-subsidization and predatory pricing, while providing for sufficient pricing flexibility to allow carriers to participate in competitive markets.

A. Predatory Pricing

The courts have not arrived at a consensus regarding a definition of predatory pricing. The Supreme Court recently stated that "[p]redatory pricing may be defined as pricing below appropriate measure of cost for purpose of eliminating competitors in the short run and reducing competition in the long run."²⁵

24. *Supra* note 16. However, there are some indications that the FCC's stance is that the competitive necessity doctrine means a carrier may meet but not beat a competitive carrier's offer. *Taff. AT&T Pushes Ahead on Tariff 15 Front*, NETWORK WORLD, Nov. 14, 1988, at 1.

25. *Cargill, Inc. v. Monfort of Colorado, Inc.*, 479 U.S. 104 (1986). Other anti-trust cases have cited a variety of definitions of predatory pricing:

- A predatory pricing conspiracy is by nature speculative. Any agreement to price below the competitive level requires the conspirators to forego profits that free competition would offer them. The foregone profits may be considered an investment in the future. For the investment to be rational, the conspirators must have a reasonable expectation of recovering, in the form of later monopoly profits, more than the losses suffered.

The legal and economic literature on predatory pricing is extensive and several excellent summaries have been written.²⁶ There are three schools of thought concerning predatory pricing:

1. *Cost-Based Predation Rules.* Some writers argue that predation is rational and that a cost-based "bright-line" predation standard should be applied to detect predatory behavior. Professors Phillip Areeda and Donald Turner wrote the article advancing this school of thought, which was subsequently adopted by many courts.²⁷

Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 575 (1986).

- "[P]redatory pricing' occurs when a firm sets its prices temporarily below its costs, with the hope that the low price will drive a competitor out of business, after which the 'predatory' firm will raise its prices so high that it will recoup its temporary losses and earn additional profit, all before new firms, attracted by the high prices, enter its market and force prices down." *Clamp-All Corp. v. Soil Pipe Inst.*, 851 F.2d 478, 483 (1st Cir. 1988).
- "[L]iability for predatory pricing must be based upon proof of pricing below cost." *MCI Communications Corp. v. AT&T*, 708 F.2d 1081, 1114 (7th Cir. 1983), *cert. den.*, 464 U.S. 891 (1983), *appeal after remand*, 748 F.2d 799 (7th Cir. 1984).
- "Predatory pricing occurs when a company that controls substantial market share lowers its prices to drive out competition so that it can charge monopoly prices, and reap monopoly profits, at a later time." *Transamerica Computer Co., Inc. v. International Bus. Mach. Corp.*, 698 F.2d 1377, 1384 (9th Cir. 1983), *cert. den.*, 464 U.S. 955 (1983).
- Predatory pricing exists "when a company foregoes short-term profits in order to develop a market position such that the company can later raise prices and recoup profits." *Richter Concrete Corp. v. Hilltop Concrete Corp.*, 691 F.2d 818, 823 (6th Cir. 1982).

See also, Liebler, *Whither Predatory Pricing? From Areeda and Turner to Matsushita*, 61 NOTRE DAME L. REV. 1052 (1986); Hurwitz & Kovacic, *Judicial Analysis of Predation: The Emerging Trends*, 35 VAND. L. REV. 63 (1982); and, P. AREEDA & H. HOVENKAMP, *ANTITRUST LAW*, at ¶¶ 711.1 *et seq.* (1986 Supp.) for a survey of predation cases.

26. See, e.g., Brodley & Hay, *Predatory Pricing: Competing Economic Theories and the Evolution of Legal Standards*, 66 CORNELL L. REV. 738 (1981); Hay, *The Economics of Predatory Pricing*, 51 ANTITRUST L.J. 361 (1982); Vawter & Zuch, *A Critical Analysis of Recent Federal Appellate Decisions on Predatory Pricing*, 51 ANTITRUST L.J. 401 (1982); and, Calvani & Lynch, *Predatory Pricing Under the Robinson-Patman and Sherman Acts: An Introduction*, 51 ANTITRUST L.J. 375 (1982).

27. Areeda & Turner, *supra* note 12. The way in which this test has been used in the antitrust courts between 1975 and 1986 is summarized in Liebler, *supra* note 25. Average variable cost is defined as the variable cost of a service at a given output level divided by that output level. Baumol points out that Professor Areeda meant for average variable cost to include product-specific fixed costs, meaning that the Areeda-Turner test could use average incremental cost as the "workable" proxy to short run marginal cost. *Product-specific fixed costs* are the costs that must be incurred before any of some particular output of a given product can be produced, and that the firm could avoid if that product were not provided, but that do not change with the magnitude of that output. W.J. BAUMOL, *SUPERFAIRNESS* 116, n. 4 (1986). Thus, Areeda's

This test considers prices above short-run marginal cost to be lawful; those below are considered predatory. Areeda and Turner suggested that *average variable cost* be used as a workable proxy for marginal cost in practice.

2. *No Predation Rules.* Some argue that predatory pricing is economically irrational — a firm would never engage in predatory pricing because such a strategy simply reduces a firm's profits, with uncertain prospects of reaping monopoly profits after rivals have been driven from the market. Others in this school argue that predation exists, but does not occur often enough to matter. In both cases, the conclusion is that no predation rules are needed. This school of thought is often identified with McGee, Bork, Easterbrook, and dicta in recent U.S. Supreme Court antitrust decisions.²⁸

3. *Game-Theoretic Predation Analyses.* Some theoretical economists argue that a predation strategy is rational, but has little or nothing to do with prices set at levels below marginal cost. These economists represent a literature that has developed since 1982. This literature applies the tools of game theory and the assumptions of asymmetric information to the analysis of predation strategy.²⁹ It develops arguments that dominant firms can enjoy the same benefits as in the classical predation model without actually violating price floors suggested by writers like Areeda and Turner. This literature is not supportive of cost-based predation rules. However, it does not support having no predation rules at all. Instead, it would suggest that predation itself be redefined to include a variety of strate-

clarification of average variable cost for Baumol does not differ in concept, if at all, from the cost benchmark proposed by Ordover and Willig. Ordover & Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L. J. 8, 21 n. 42 (1981).

28. See McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 J. L. & ECON. 137 (1958); R. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 154 (1978); Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981); and, *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574 (1986).

29. Game theory is a *decision making* theory which considers how economic agents behave when faced with a variety of behavioral options and associated payoffs. The role of asymmetric information in the new predation literature involves, for example, the fact that the "prey" in a predatory pricing scenario may make inferences about the "predator's" costs or about market demand based on the predator's pricing behavior. In this instance, the predator seeks to misinform the prey and contribute to the existing asymmetric information, possibly eliciting exit or forestalling future entry. This is in contrast to the familiar cost-based predation literature in which perfect information is implicitly assumed.

A good overview is provided by P. Milgrom & J. Roberts, *Asymmetric Information, Theories of Predatory Pricing, and the New Orthodoxy in Antitrust*, paper presented at the American Economic Association Meetings, Chicago, IL (Dec. 1987). Asymmetric information games as they relate to predation analyses are described in Milgrom & Roberts, *Informational Asymmetries, Strategic Behavior, and Industrial Organization*, 77 AM. ECON. REV. 184, (Papers and Proceedings), (1987).

gic pricing behaviors, none of which may include setting price below marginal cost.

Price floors based on incremental cost are relevant, useful predation safeguards only if one subscribes to the cost-based school of thought on predation to the letter. This applies to explicit price floors (such as the Areeda-Turner test) or implicit price floors (such as the net revenue test). Under the other schools of thought on predation, setting price floors based on incremental cost to prevent predation is either unnecessary, since predation is rare and economically irrational, or irrelevant, since predation can occur regardless of the price-marginal cost relationship.³⁰

Is predatory pricing a realistic concern of public utility regulation in the long distance market? This Article argues that it is not, because to the extent that it would be a realistic problem, the existing antitrust laws were designed to handle this type of behavior.³¹ Furthermore, pricing below incremental cost (as the classical model of predation so often cited in regulatory proceedings requires) reduces current profits. For a predation strategy to be successful, these short term losses must eventually lead to increased long term profits by eliminating rivals or reducing their penetration, permitting the predator to charge higher prices later. The success of this strategy revolves around the difficulty of entering this market. If entry is relatively easy (which is true of the long distance market), predation will not succeed

30. In fact, additional academic research on cost-based predatory pricing benchmarks has also supported the concept that price floors as implemented by the Areeda-Turner test are of little or no value. These analyses and their conclusions also apply to the net revenue test as a proposed predation safeguard. For example, economics professors Gilligan and Smirlock raised a related criticism of Areeda-Turner predation tests. They examined the relationship between predation and cross-subsidization for the value maximizing firm, i.e., which would maximize the value of its stock price. They showed that for a multiproduct firm producing goods with different risk characteristics, cross-subsidization can be both a value maximizing strategy and a characteristic of long-run competitive equilibrium. Thus, a multiproduct firm may give the appearance of engaging in cross-subsidization as a method of financing a predatory pricing strategy without anti-competitive intent. Gilligan and Smirlock come to the conclusion that cross-subsidization does not constitute *prima facie* evidence of anti-competitive behavior. Accordingly, price floors do not prevent predation. See Gilligan & Smirlock, *Predation and Cross-Subsidization in the Value Maximizing Multiproduct Firm*, 50 S. ECON. J. 37 (1983).

31. See, e.g. Besen & Woodbury, *Regulation, Deregulation, and Antitrust in the Telecommunications Industry*, ANTITRUST BULLETIN 39 (Spring 1983).

because rivals would enter as soon as prices were raised to recoup the losses from eliminating the previous rivals.³²

Liebeler did a survey of predation cases from 1975 to 1986, concluding that almost all of the predatory pricing cases to come before the courts in this period could have been decided summarily for the defendant under the standards set forth in *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*³³ Liebeler argues that this would have been the case without even considering the relationship between the alleged predator's price and cost. He concludes that courts should focus on factors other than the price-cost relationship to decide cases summarily for defendants.³⁴ Liebeler's analysis indicates that predatory pricing in the period from 1975 to 1986 was more a rash of paranoia than a true binge of predation by American industry, and if so, the wisdom of asymmetric regulation based in part on predation concerns should be questioned.

B. Cross-Subsidization

In general, a cross-subsidy exists when the revenues from one service are used to price another service below its incremental costs.³⁵ Professor Gerald Faulhaber, who provided the first

32. Our analysis here does not differ significantly from those presented in Kaserman & Mayo, *infra* note 106; Kaserman & Mayo, *The Ghosts of Deregulated Telecommunications: An Essay by Exorcists*, 6 J. POL'Y ANALYSIS & MGMT. 84 (1986); Katz & Willig, *infra* note 106. See also, J. TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 377-79 (1988) for a description and critique of the "long purse" predation scenario often cited in filed materials in regulatory proceedings.

33. 475 U.S. 574 (1986). There, the Supreme Court ruled that predatory pricing is quite implausible. The Court focused on the problems of obtaining a monopoly without incurring unrecoverable losses and the problem of preventing entry during the recoupment period. Unlike the cost-based predation tests, the Court emphasized the factors other than the relationship between the alleged predator's prices and costs.

34. Liebeler, *supra* note 25. See also, Hurwitz & Kovacic, *supra* note 25, at 66-71.

35. "Incremental cost" is defined in this paper as the additional cost to the firm of a change in the quantity supplied of a service. It includes a service's variable costs and any service-specific fixed costs associated with the change in quantity supplied, but excludes costs directly attributable to the production of other services, and certain unattributable costs which (1) are incurred in common with other services supplied by the firm, and (2) do not vary with the level of output. The closely related concept of "marginal cost" refers to the additional cost of supplying a single, infinitesimally small additional unit, whereas "incremental unit cost" usually refers to the average additional cost per unit of a finite (and possibly large) change in production or sales. See, Baumol & Walton, *Full Costing, Competition, and Regulatory Practice*, 82 YALE L.J. 639 (1973); I. A. KAHN, *THE ECONOMICS OF REGULATION* 66 (2nd. ed. 1988).

technical definition, defines cross-subsidization for profit-constrained, multiproduct firms as the presence of either or both of the following conditions:³⁶

A service is subsidized if the revenue from the sale of that service is less than the added cost of supplying that service (given that the other services supplied by the common capital facility are already being supplied).

A service subsidizes others if the revenue from its sales exceeds the cost of supplying the service in isolation, i.e., without supplying any other services.

When service prices fall outside these two conditions, Faulhaber defines the service as "subsidy-free."³⁷ The Faulhaber test uses prices based on incremental cost as a floor, and prices based on the stand-alone cost³⁸ as the ceiling, although the full technical requirements of his test of cross-subsidization are by no means this simple.

It is often contended that regulated multiproduct firms have an incentive to cross-subsidize so as to finance a predation strategy. These contentions are rooted in the time-honored analysis of Averch and Johnson, who provided a rigorous economic analysis of the behavior of the firm regulated by rate-of-return.³⁹

36. Faulhaber, *supra* note 12. These conditions pertain to single services and to all possible groupings of services.

37. Faulhaber defines a collection of prices as technically *subsidy-free* when none of the individual prices are higher than they would be if the products were produced separately. ("If the provision of any commodity (or group of commodities) by a multicommodity enterprise subject to a profit constraint leads to prices for the other commodities no higher than they would pay by themselves, then the price structure is *subsidy-free*.") Faulhaber, *supra* note 12, at 966. For a discussion of Faulhaber's criteria, see generally Temin & Peters, *Cross-Subsidization in the Telephone Network*, 21 WILLAMETTE L. REV. 199, 205-10 (1985).

38. The "stand-alone cost" (SAC) of a service (or group of services) is the cost that would be incurred by an efficient independent entrant to the market in the provision of that service (or group of services). For example, if a firm provided three services, X, Y, and Z, the SAC of products X and Y is defined as the total cost that would be incurred by an efficient independent supplier that produced X and Y, but no other services. In this case, entry by a firm producing just these two services will be induced only if the revenues contributed by these two services exceed their joint SAC. Another interpretation of SAC is the costs which would result if the incumbent company itself were to produce the service or services in isolation, in this example, forgoing production of Z.

It is commonly held that, because of the vast array of telecommunications services that use common facilities, a SAC test would be far too cumbersome as a practical tool for the regulation of modern telecommunications firms.

39. Averch & Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962).

They concluded that under such conditions there is incentive for regulated firms to overinvest in capital and thus pad costs.

Regulated firms would have an incentive to enter other regulated markets if the regulatory agency based its "fair rate of return" criterion on the firm's overall rate base for all such markets taken together. In other words, expanding into other markets may enable the firm to inflate its rate base to satisfy the constraint on maximum rate-of-return, and permit it to earn a greater total constrained profit than would have been possible without entering other markets.⁴⁰

Averch and Johnson also discussed in their article the scenario in which the regulated firm also operates in oligopolistic unregulated markets.⁴¹ They contended that the regulated firm could "afford" to take (long-run) losses in such markets, while competing firms could not. In this way, the regulated firm may succeed in driving out lower cost rivals or in forestalling entry of new rivals, as the loss it takes in unregulated markets could exceed the difference between its costs and the lower costs of other, competing firms.⁴²

The Averch and Johnson cross-subsidization scenario, however, is premised on two fundamental assumptions which do not apply to the telecommunications industry.⁴³ First, their scenario assumes that the regulated company's allowed rate-of-return exceeds the true cost of capital to the firm.⁴⁴ Thus, the potential flow of profit to the rate-of-return regulated firm reflects the difference between the allowed rate-of-return and the true cost of capital. Consequently, the firm has the incentive to increase its capital stock, even if such actions are not otherwise profitable or efficient. Extra returns would be earned if unwittingly included by the regulators in the inefficient allowed rate-of-return. The more capital the firm purchases, the greater the added returns it is allowed to accrue.

Second, the regulated firm could use its additional return on

40. *Id.* at 1057-58.

41. *Id.*

42. *Id.* at 1058.

43. The following discussion is based on J. Ordover & G. Saloner, Predation, Monopolization, and Antitrust (Domestic Studies Program, Hoover Institution, Working Paper E-87-17) 49-52 (1987).

44. Averch & Johnson, *supra* note 39, at 1059.

capital as a financial "war chest" to wage a cross-subsidization and predatory pricing campaign against equally efficient (or lower cost) rivals. The "war chest" can only be amassed on the assumption that the regulated firm earns the allowed rate-of-return at all times. The firm can engage in exclusionary anti-competitive behavior indefinitely. It finances its losses in competitive markets with inefficiently high prices in other markets in which it does not face competition. In this way, predatory activity by an inefficiently regulated firm can take place with no need to recoup short-run losses later on, after all rivals have exited the market.⁴⁵

Hence, the assertion (based on the Averch-Johnson model) that regulated firms that offer both competitive and monopoly services have the ability to cross-subsidize and be predatory at will, and profit from the strategy, is firmly grounded in at least two assumptions: (1) the allowed rate-of-return exceeds the market rate-of-return, and (2) the regulated firm earns the allowed rate-of-return at all times.

These assumptions are not true in the telecommunications industry. Telephone companies are not allowed to earn rates-of-return that exceed the market cost of capital;⁴⁶ nor do the companies' rates-of-return always stay at or above the allowed rates-of-return. Thus, it is not a foregone conclusion that a telephone company either could or would engage in cross-subsidization as a means of predatory pricing via the oft-cited Averch-Johnson

45. The scenario described has been labelled the long purse scenario. The long purse scenario for predatory pricing holds that the predator's primary means of inducing exit consists of waging a price war that inflicts losses on the rival until its resources are exhausted. This scenario assumes that the rival's ability to raise equity and debt financing was limited and that limit is known to the potential predator (who is presumed to have greater resources). It also assumes the rival firm must incur some fixed costs to remain in operation. By driving the market unit price below the rival's average variable costs (which would result in a loss at least as large as the rival's fixed costs), the predator exhausts the rival's reserves and drives it out of the market. This scenario was first modeled by Telser and is used frequently by participants in regulatory proceedings as an anecdotal technical definition of "predatory pricing." Ordoover & Saloner, *supra* note 43, at 18-19; Telser, *Cutthroat Competition and the Long Purse*, 9 J. L. & ECON. 259 (1966). See also, J. TIROLE, *supra* note 32, at 377-79.

46. In fact, even the mere consideration of whether the allowed rate-of-return exceeds the market rate-of-return is probably moot. It has long been recognized that accounting rates-of-return are not useful for inferring monopoly profits. See Fisher & McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 AM. ECON. REV. 82 (1983).

scenario.⁴⁷

George Sweeney has some surprising insights into cross-subsidization and the related problem of predation.⁴⁸ Sweeney's scenario describes a situation comparable to that of AT&T and the BOCs. He considers a firm that is partially regulated (*i.e.*, some products are regulated, some are not) by an agency that requires as a limitation that revenues from each product in the regulated product line cover no more than its respective allocated cost.

Sweeney's study dispels the concern that such a firm will price too low in its unregulated competitive market. His analysis has two important results: (1) a firm selling under such a limitation would choose inefficient prices, in the sense that its prices in one or both markets could be lowered to improve economic welfare without decreasing the firm's profits, and (2) the prices the firm chooses to set for its unregulated products are *higher* than those it would have chosen as an entirely unregulated profit-maximizing firm.⁴⁹ By removing this limitation, prices could be permitted to be lowered, without decreasing the

47. See Albery & Sievers, *The Averch-Johnson-Wellisz Model and the Telecommunications Industry*, 40 FED. COMM. L.J. 157, 164 (1988).

Economist Robert Crandall addresses both of these assumptions. He suggests that the risk of "fooling the regulators" by shifting some of the costs of service in a new market to a regulated market, is a major reason for restricting regulated companies solely to their limited lines of business. If regulators can indeed be fooled, then why must a regulated firm enter unregulated product or service markets in order to fool them? Other mechanisms are available if this is a true objective of the regulated firm, *e.g.*, manipulation of various accounting conventions. "Second, how does one know that the regulatory constraint is actually binding? It is assumed that unregulated prices must be higher than regulated prices, but this assumption will always be questioned." Third, even if a monopolist is successful in "fooling the regulators," the resulting cross-subsidies may not greatly affect competition in the unregulated markets. For these cross-subsidies to affect the regulated firm's prices in unregulated markets (or those subject to reduced regulation in the form of customer specific offerings), they must affect incremental production costs in the unregulated markets. Yet this outcome may not occur. "The subsidies may be exhausted in the production of inframarginal units, or they may be unrelated to costs that vary with output." Crandall, *The Role of the U.S. Local Operating Companies, in CHANGING THE RULES: TECHNOLOGICAL CHANGE, INTERNATIONAL COMPETITION, AND REGULATION IN COMMUNICATIONS* 125 (R. Crandall & K. Flamm eds. 1989).

48. See Sweeney, *Welfare Implications of Fully Distributed Cost Pricing Applied to Partially Regulated Firms*, 13 BELL J. ECON. 525, 526 (1982). See also S. BERG & J. TSCHIRHART, *NATURAL MONOPOLY REGULATION: PRINCIPLES AND PRACTICE*, 445-49 (1988).

49. *Id.*

regulated firm's profit.⁵⁰

Regulation has made long distance prices artificially high, meaning that such prices are high enough to attract entrants that can charge lower prices, yet break even and remain in the market. Paradoxically, regulation is not solving cross-subsidization; it is making it unreasonably hard for the firm to compete. From an economic standpoint, the prices resulting from *Tariff No. 15* offerings enable AT&T to compete with such entrants in an economically efficient manner, setting prices that are lower, but still subsidy-free.

AT&T is now a partially regulated firm subject to price ceilings for the regulated products. Such a scenario has been given rigorous analysis by economists Braeutigam and Panzar.⁵¹ Their analysis considers a hypothetical firm that offers just two products, one a "core" product, the other a competitive product. Costs consist of common costs plus the costs that are directly attributable to each product. The firm is regulated via a price constraint for the core service, but may offer the competitive service unencumbered by any regulatory policy tools. The level of the price cap is treated exogenously by the firm (*i.e.*, the firm cannot influence the level of the price cap via its own economic actions). The firm so regulated thus attempts to maximize profits subject to the cap on the price of the core service.

The mathematical properties of this model indicate that cross-subsidization and predation are not optimal strategies under this form of regulation. First, the firm has no incentives to misreport costs and to choose an inefficient technology because cost allocations are not required under this regulatory scheme. Second, the firm will have the same incentive to undertake cost reducing innovation as the unregulated firm. Third, the firm will produce in the competitive market up to the point at which marginal cost equals price, since that will maximize profits (and the choice of output in the competitive market has no effect on the price ceiling constraint).⁵² Further, "costs" are

50. *Id.*

51. R.R. Braeutigam & J.C. Panzar, *Diversification Incentives Under "Price-Based" and "Cost-Based" Regulation* (Dec. 1988) (paper presented at the Rutgers University Advanced Workshop in Regulation and Public Utility Economics Second Annual Western Conference, Monterey, Cal. (July 5, 1989)).

52. *Id.* at 25.

not changed by the relative output levels produced in the core and competitive markets, as they would be in Sweeney's model.

The working contestability of the long distance market in the market segment of high-use customers has important implications for cross-subsidies. Baumol, Panzar, and Willig define prices to be subsidy-free if: (1) the prices cover the costs of production, or (2) the revenues collected at such prices from the sale of any subset of services are less than the cost of producing the same quantity of those products independently.⁵³ Wherever a cross-subsidy is present, a market entrant can produce a subset of the services, charge lower prices, and still break even. If a market is workably contestable, cross-subsidy cannot endure and regulatory safeguards are not needed.

Faulhaber's definition of cross-subsidization requires that some products (or groups of products) be priced at less than what it costs to supply them. The source of these subsidies is the revenue from products that are priced high enough to cover their own costs, and yield additional revenue for the subsidies. Accordingly, additional profits do not automatically result from cross-subsidization. Cross-subsidization may reduce the seller's profits when incremental revenues from a given subset of services do not cover incremental cost.

Moreover, when a seller cross-subsidizes certain customers, he must fund the cross-subsidies from revenues from other customers by charging them higher prices. If profits are highest from charging these other customers higher prices, the seller would want to do so anyway, regardless of the need for funding a cross-subsidy. If profits would be greater at a lower price, then the cross-subsidization may do nothing more than reduce profits from these other customers as well. Faced with such a situation, a dominant carrier would have little profit motivation to cross-subsidize.

C. Cost Guidelines for Price Floors

Professor William Baumol discusses guidelines for price floors as a possible solution to the problems of cross-subsidiza-

53. W. BAUMOL, J. PANZAR, & R. WILLIG, *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE*, 351-56 (1982). Note that contestability requires that all producers have access to the same technology.

tion and predation. He discusses two related guidelines: (1) the gross incremental test and (2) the net incremental cost test based on Faulhaber's work.⁵⁴

The gross incremental costs of a service are defined as the excess of total costs at current output levels over the total costs that would be incurred if the service were no longer produced, but other existing services were produced at the current levels of output. Under the gross incremental cost test, a service does not receive a subsidy when its unit price is greater than or equal to its average gross incremental cost per unit. In other words, a service does not receive a subsidy under the gross incremental cost test when its total revenues exceed its gross incremental costs. The reasoning behind this test is that the revenues contributed by purchasers of a service must at least cover the costs caused by such customers' demands.⁵⁵

The net incremental costs of a service are defined as the excess of total costs at current output levels over total costs that would be incurred if the service was no longer produced, including the effects on the demand for other services. The net incremental cost acknowledges cross-elastic effects between a given service and other services produced by the firm.

Under the net incremental cost test, a service does not receive a subsidy if its total revenues are greater than its net incremental costs.⁵⁶ The net incremental cost test is used as the basis for discounted cash flow analysis commonly employed to evaluate a new investment or new addition to a product line.⁵⁷ Thus, the net incremental cost test is arguably a restatement of the common business practice of ensuring that the total revenues of a new project are sufficient to cover the total costs caused by the project. In order to be undertaken, a project must generate a positive net present value.

54. W. Baumol, *Minimum and Maximum Pricing Principles for Residual Regulation*, 5 *EASTERN ECON. J.*, Jan.-Apr. 1979, at 235-48.

55. *Id.* at 184; W. Sharkey, *Economic and Game Theoretic Issues Associated with Cost Allocation in a Telecommunications Network*, in *COST ALLOCATION: METHODS, PRINCIPLES, APPLICATIONS* 155, 160 (H.P. Young ed. 1985).

56. The Net Incremental Cost test is described in Baumol, *supra* note 54, at 183-87; Faulhaber, *supra* note 12; E. ZAJAC, *FAIRNESS OR EFFICIENCY: AN INTRODUCTION TO PUBLIC UTILITY PRICING* 88-89 (1978).

57. See J. MCGUIGAN & R. MOYER, *MANAGERIAL ECONOMICS* 450-73 (3d ed. 1983).

Faulhaber suggests an amendment to the net incremental cost test. He argues that the basic net incremental cost test outlined is insufficient as a test of compensatory pricing. Instead, to ensure that prices are compensatory and not cross-subsidized, Faulhaber would require that each and every service offered by the company, taken separately and in all possible combinations, must satisfy the condition that net incremental revenue equal or exceed net incremental cost.⁵⁸

For example, suppose a small telephone company offers just two services, local service and local data transport. The same basic network is required to provide each service. Since the basic network must be built if any service is to be provided, the incremental network construction cost of each service, given the other, is zero.

If these two services each were to contribute revenue just sufficient to pay for their own individual incremental costs, no revenues would be available for the recovery of the costs of the network. In this sense, such rates are not compensatory. To be compensatory, the incremental revenue of each service and every combination of services must contribute net incremental revenues which equal or exceed their corresponding net incremental costs.⁵⁹ In this case, without the condition that every combination of services yield revenues at least equal to their combined net incremental cost, the prices that would have passed a gross incremental cost test could fail to recover total costs of the network.

This example illustrates the desirability of using a net incremental cost guideline rather than a gross incremental cost guideline. The FCC's net revenue test is a practical application of the net incremental cost guideline and is discussed in the next section.

D. The FCC's Net Revenue Test

In *OCP Guidelines*, the FCC proposed general guidelines for the flexible pricing of message toll services (MTS).⁶⁰ These guidelines applied to the offering of MTS price reductions as

58. Faulhaber, *supra* note 12, at 969-72; see also, Baumol, *supra* note 54, at 186.

59. Faulhaber, *supra* note 12, at 966; Baumol, *supra* note 54, at 186-87.

60. *OCP Guidelines*, *supra* note 8.

part of an optional calling plan (OCP). The FCC defined an OCP as a "supplemental or additional MTS offering which allows customers to purchase MTS under an alternative, non-traditional pricing mechanism."⁶¹ For example, an OCP could offer MTS on a distance-insensitive basis or in bulk at a reduced rate, but could not alter the rate structure of the underlying basic MTS service. The MTS would still be offered at the original regulated rate; only the optional services would be affected.

These guidelines were established to prevent anti-competitive behavior while allowing dominant carriers increased pricing flexibility. Thus, the FCC attempted to strike a balance between the competitive dangers of "predatory" pricing by dominant firms, and the danger of stimulating economically inefficient entry by maintaining an artificially high pricing "umbrella" (which serves to protect inefficient competitors and inflate prices to consumers). The FCC specifically identified the process in which a dominant carrier deliberately sacrifices near-term revenues to drive competitors out of the market and recoups its losses later through higher long-term prices and profits earned in the absence of competition, as well as a similar practice termed "pricing without regard to cost."⁶²

Under the FCC's net revenue test, a carrier must demonstrate that when it offers price discounts on MTS using an OCP it increases its net revenues (gross revenues minus costs). This test ensures that a price reduction in the form of an OCP is not a method for setting prices below costs for anti-competitive purposes. The net revenue test thereby addresses whether the rates proposed by a dominant carrier were so low as to be predatory. If the additional revenues from an OCP exceed the additional costs it causes, the discount passes the net revenue test.

61. *Id.* at ¶ 1.

62. *Id.* at ¶ 2. Sacrificing short run profits to drive out competitors or exclude new entrants is the classical model of predatory pricing. See *supra* Section IIA (discussion of predatory pricing). Pricing without regard to cost, however, is a concept that does not necessarily require prices set below costs. It simply involves pricing with predatory intent, whether these prices are below costs or not. See W. BROCK & D. EVANS, *Predation: A Critique of the Government's Case in US v. AT&T*, in *BREAKING UP BELL: ESSAYS ON INDUSTRIAL ORGANIZATION AND REGULATION*, 51-53 (D.S. Evans ed. 1983); R. Noll & B. Owen, *The Anticompetitive Uses of Regulation: United States v. AT&T*, in *THE ANTITRUST REVOLUTION*, 309-312 (J.E. Kwoka & L.J. White eds. 1989).

1. The Net Revenue Test and Cost Guidelines

Faulhaber's criteria⁶³ require that every possible combination of services produces revenues that equal or exceed their respective incremental costs. The net revenue test is an approximation of Faulhaber's test. The test outlined in the *OCP Guidelines* meets some of these conditions, but not all of them. All the *OCP Guidelines* requires is that the incremental revenues of a service category (due, for example, to a pricing change) exceed the corresponding incremental costs of that category.⁶⁴

2. Conditions of the Net Revenue Test

The FCC imposed the following eight refinements on the net revenue test which was to be applied to the OCP offerings of dominant carriers:

1. The projected increase in net revenues is to be measured on a present value basis.
2. A proposed supplemental or optional MTS calling plan is required to increase the filing carrier's net revenues for switched services, *i.e.*, total switched services revenues less total cost of providing switched services offerings, including access charges. The FCC explained that the carrier was to realize *more* revenue from the offering, not merely more than it would have realized had it not offered the OCP. Even so, the FCC stipulated that a carrier can still meet the net revenue test if its OCP produces revenues exceeding what would have been realized without an OCP, yet not leading to an actual increase in revenues *per se*. In this case, the carrier was expected to submit reliable documentation of the projected financial outcomes to be considered in reviewing the OCP.
3. Proposed OCPs are required to be projected to increase net revenues within 12 months after the effective date of any access tariff revisions which reflect the expected stimulation due to the OCP.
4. If a particular element of an OCP is to be offered separately and there is a risk of anti-competitive behavior, the FCC requires the carrier to show that the element is to be priced in a manner consistent with the net revenue standard.
5. To deter cross-subsidization, a carrier is required to demonstrate a net increase in switched services revenues rather than an increase in revenues for the firm as a whole or an increase in net MTS revenues (which the FCC deemed to be too narrow a category for the relevant incremental comparison of costs and revenues).

63. See *supra* note 56 and accompanying text.

64. *Id.*

6. A dominant carrier is required to provide and explain the assumptions and estimates filed with a proposed OCP.
7. To ensure that OCPs would increase net revenues and thereby help prevent their cross-subsidization with revenues from other services, the dominant carrier is also required to explain how costs were allocated to an OCP. Reallocations of costs that departed from the FCC rules or orders were to be explained and justified.
8. Quarterly financial reports comparing the actual operating results of an OCP with the projections were required. Data for the first three quarters of an OCP were to be filed one year after the OCP became effective.⁶⁵

3. The Net Revenue Test in Practice

Beside being applied to OCPs,⁶⁶ the net revenue test has been utilized in other dockets as a proxy for marginal cost pricing. For example, in *Decreased Regulation*, the net revenue test was proposed by several commentators as a means of fostering pricing flexibility without giving up safeguards against anticompetitive pricing practices.⁶⁷ This test was suggested in lieu of the more familiar fully distributed cost (FDC) methods used so often in telecommunications regulation. In *Price Cap Regulation*, the FCC suggested the use of the net revenue test as a means of pricing new and restructured services.⁶⁸ Further, this test was proposed by AT&T in *Tariff No. 12* as a means of ensuring the lack of cross-subsidies and predatory intent for custom networks offered under bid on an individual case basis.⁶⁹

E. Economic Evaluation of the Net Revenue Test

In general, allowing a carrier the pricing flexibility inherent in individual customer offerings produces benefits for all of that carrier's customers if two conditions are met:

Single customer offerings are used to obtain or retain business that the carrier would not normally obtain or retain at the standard tariffed rate.

65. *OCP Guidelines*, *supra* note 8, at ¶¶ 49-55.

66. See, e.g., *Pro America Optional Calling Plan Tariff*, Memorandum Opinion & Order, 103 F.C.C.2d 134 (1985).

67. *Decreased Regulation of Certain Basic Telecommunications Services*, Notice of Proposed Rulemaking, 2 FCC Rcd 645 (1987) [hereinafter *Decreased Regulation*].

68. *Policy and Rules Concerning Rates for Dominant Carriers*, Further Notice of Proposed Rulemaking, 3 FCC Rcd. 3195 (1988) [hereinafter *Price Cap Regulation*].

69. AT&T Communications Tariff No. 12, 64 R.R.2d 681 (1988); AT&T Communications Tariff Nos. 10 & 12, 2 FCC Rcd 7389, 64 R.R.2d 149 (1988).

The additional business generated by offering prices lower than tariffed rates contributes to covering the carrier's overhead costs.⁷⁰

If these conditions are satisfied, all of a carrier's customers are better off because the additional business being generated not only pays for the additional costs it causes, but also permits a carrier's overhead costs to be recovered from a larger base of customers, thus permitting a carrier to charge all of its customers lower prices.⁷¹

The net revenue test is quite similar to the economically relevant incremental comparison of revenues and costs for appraising a particular pricing decision. The net revenue test requires that additional revenues generated by a particular economic decision exceed the corresponding additional costs. The test is analogous to methods employed by unregulated competitive firms when they perform discounted cash flow analyses to evaluate prospective economic decisions. It may differ from such analyses, however, because the FCC expects largely *ad hoc* cost allocations⁷² to be performed in this test. Such allocations are not necessary in a purely incremental analysis.⁷³ However, the test is superior to the fully distributed cost (FDC) methods which the FCC has employed in the past because FDC methods in general make no comparison between incremental revenues and costs; hence they cannot be expected to prevent cross-subsidies or predatory pricing.⁷⁴

1. The Net Revenue Test and Cross-Subsidization

Although the conditions of the net revenue test are not as extensive as those in Faulhaber's net incremental cost test, they are probably sufficient to prevent cross-subsidization in a practical sense. The strict conditions for cross-subsidy prevention defined by Faulhaber require explicit and precise knowledge about

70. See C. Monson, *Pricing Flexibility and the Public Interest*, PUB. UTIL. FORT., Aug. 3, 1989, at 18.

71. *Id.*

72. See, e.g., *infra* text accompanying note 87.

73. Note that carriers may deviate from the cost allocation methods normally employed in filings to the FCC when performing the net revenue test, but must defend the reason for doing it. *OCP Guidelines*, *supra* note 8, ¶ 54.

74. One shortcoming of the net revenue test, however, is that it implicitly assumes that current prices are appropriate as a starting point for the analysis. For example, it is possible for an economically efficient price change to fail the net revenue test just because initial prices are too high.

products and services that most firms, regulated or not, might not have. The net revenue test is at least as stringent as the conditions used by many unregulated competitive firms in this regard. The Faulhaber test requires specific data that both regulated and unregulated firms are unlikely to have at their disposal.

Yet the net revenue test may still require a great deal of information that is difficult to obtain or estimate. For example, extensive data concerning subjective judgments on key inputs (e.g., the price elasticity of demand, cross-elasticities, discount rates, etc.) may be required to execute the test. Most large corporations do not have data on variable costs from their cost accounting systems.⁷⁵ Those that have such data do not necessarily have data on the proper functional relationship between variable costs and output levels.⁷⁶ After all, marginal cost is the rate of change of variable costs. Yet these requirements in many ways are no less imposing than the informational requirements of the discounted cash flow analyses performed by a large number of multiproduct firms. The relative simplicity of FDC-based methods does not make them more attractive or superior to the net revenue test, since FDC methods do not contain any meaningful economic content.

An interesting criticism of net revenue test methods is raised by Baseman.⁷⁷ In the context of cross-subsidies between regulated and nonregulated activities, Baseman points out that it is difficult to determine if a nonregulated service is being subsidized by comparing the price charged for that service with the carrier's incremental cost of providing it. The carrier could have chosen a technology that is inefficient for the entire array of serv-

75. Accountants Cooper and Kaplan contend that in corporate accounting systems, the reporting of variable costs is very often the exception rather than the rule. For this reason, it is not at all unusual for tests requiring variable costs, such as the Areeda-Turner test or the net revenue test, to be quite burdensome for large multiproduct firms. See Cooper & Kaplan, *How Cost Accounting Systematically Distorts Product Costs*, in ACCOUNTING AND MANAGEMENT: FIELD STUDY PERSPECTIVES 204, 212-13 (W. Bruns, Jr. & R. Kaplan eds. 1987).

76. *Id.*

77. K. Baseman, *Open Entry and Cross-Subsidization in Regulated Markets*, in STUDIES IN PUBLIC REGULATION 329-360 (G. Fromm ed. 1981), as cited in Crandall, *The Role of the U.S. Local Operating Companies*, in CHANGING THE RULES: TECHNOLOGICAL CHANGE, INTERNATIONAL COMPETITION, AND REGULATION IN COMMUNICATIONS 131 (R.W. Crandall & K. Flamm eds. 1989).

ices but provides the nonregulated service at a low incremental cost. This eventuality, however, seems quite unlikely for the telecommunications industry, since most of the network was planned and developed before network engineers or product managers knew which services would be deregulated or subject to reduced regulation.⁷⁸

2. The Net Revenue Test and Predatory Pricing

The net revenue test can reasonably be expected to prevent predatory pricing because it emulates the cost test used in many courts. The bright-line for predation used by most antitrust courts is the Areeda-Turner test.⁷⁹ This test considers prices above short-run marginal cost to be lawful; those below are considered predatory. If a set of prices will pass a net revenue test, then it will probably pass the Areeda-Turner test. Given this, the net revenue test can serve as a predatory pricing safeguard if one is willing to acknowledge the validity of the cost-based tests of predation like the Areeda-Turner test.⁸⁰ If a carrier's rates pass the net revenue test, which requires that revenues from a service at least cover the incremental cost of providing the service, then that carrier's prices will not be so low as to eliminate its rivals anticompetitively, using the Areeda-Turner test as the cost benchmark.

It should be pointed out, however, that the Areeda-Turner test itself has been assailed as being a poor benchmark.⁸¹ The numerous academic opponents of the Areeda-Turner test would deem the net revenue test a suitable safeguard for cross-subsidies, but irrelevant as a predation safeguard.

If one subscribes to the "no rule" school of thought or the

78. *Id.*

79. Areeda & Turner, *supra* note 12.

80. The literature has produced several of these. See generally R. POSNER, *ANTI-TRUST LAW: AN ECONOMIC PERSPECTIVE* 184-196 (1976); Joskow & Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213, 242-55 (1979); Baumol, *Quasi-Permanence of Price Reductions: A Policy for Prevention of Predatory Pricing*, 89 YALE L.J. 1, 5 (1979); Ordover & Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8 (1981); Zerbe & Cooper, *An Empirical and Theoretical Comparison of Alternative Predation Rules*, 61 TEX. L. REV. 655 (1982).

81. For a survey of these, see Larson & Sievers, *On the Ineffectiveness of Price Floors in Telecommunications Regulation*, 25 WILLAMETTE L. REV. 89 (1989); see also H. HOVENKAMP, *ECONOMICS AND FEDERAL ANTITRUST LAW* 175-179 (1985).

"game-theoretic" approach discussed briefly above, then one considers implicit price floors of any kind useless policy tools. In this case, the Areeda-Turner test for predatory pricing is considered worthless, hence the net revenue test (which emulates the Areeda-Turner test) would also be considered of no value. However, this does not really make the net revenue test a poor predation safeguard.

The "no rule" school of thought says that predation does not happen anyway, making the net revenue test or any other price floor an unneeded safeguard. The "game-theoretic" analyses of predation conclude that no cost-based test can necessarily prevent predatory pricing if the "predator" firms are better informed than the "prey" and use this informational asymmetry to their strategic advantage. This approach would then conclude that the net revenue test, Areeda-Turner test, or any other cost-based approach is irrelevant to serving as a safeguard to predation.

The net revenue test as a predation safeguard assumes that the price-cost relationship of the dominant firm is the only important determinant of whether a predation strategy could realistically be carried out successfully. Like the Areeda-Turner test it emulates, it cannot address market structural issues, such as market shares of capacity or barriers to entry. Yet an examination of such structural issues may preclude the need to examine the price-cost relationship, for if such necessary ingredients for a successful predation strategy are not present, e.g., entry barriers, the price-cost relationship is irrelevant.

The preoccupation with the relationship between price and cost in post-1975 cases derives in part from academic literature discussing the Areeda-Turner test. Many courts focused exclusively on the price-cost relationship, slighting other factors on which a legitimate inference of predatory pricing depends.⁸² Absent such additional factors, no inference of predation could be drawn even if prices were below the lowest appropriate measure of cost. These factors can include rigorously defined markets, a dangerous probability of success in the attempt to monopolize, and the ability to maintain higher prices long enough to recoup

82. For a discussion of these cases, see Liebler, *supra* note 25.

predatory losses, due to entry barriers.⁸³

What this means is that the net revenue test may be unnecessary, even though it is an economically sound comparison of incremental revenues and costs. The necessary ingredients for a successful predation strategy may not be present, so an examination of the price-cost relationship via the net revenue test may yield no benefits. The net revenue test cannot offer safeguards to a problem that does not exist in the first place. It can, however, impose costs on the firms required to perform it. Thus, a fuller picture of the market and the ingredients of predatory pricing may preclude the need to perform a net revenue test if predatory pricing is the primary concern when granting the ability to make customer-specific offerings.

3. The Net Revenue Test vs. Fully Distributed Costs

Commonly proposed alternatives to incremental cost methods like the net revenue test are fully distributed cost methods. An FDC method is a means of assigning costs to services or service categories of regulated firms.⁸⁴ With some exceptions, a given service is directly assigned costs which can unambiguously be attributed to it.⁸⁵ For example, the wages and salaries of directory assistance operators are attributed directly to operator services; the costs of packet switch installation and maintenance are assigned to packet-switched high-speed data transmission service.

In addition to such directly attributable costs, a service is assigned a *pro rata* portion of the shared costs⁸⁶ of production,

83. *Id.*

84. Fully distributed costs are also referenced as "fully allocated costs" and "full costing" in the law and regulatory economics literature.

85. In practice, there are important exceptions to this statement. The scope of this paper precludes a more detailed exposition.

86. *Shared costs* are the sum of *joint costs* and *common costs*. Joint costs are the costs of services produced jointly, but in fixed proportions to one another. If outputs can be produced in variable proportions to one another, then such costs are common costs. Common costs are also referenced in the literature as "fixed costs," "overhead costs," "unattributable costs," and "remaining costs."

Neither joint costs nor common costs can be assigned directly to any service *ex ante* in an economically meaningful way. Joint costs may be directly attributed to the appropriate category of services, but not to individual services. Common costs cannot normally be directly attributed even to categories of services. See I. A. KAHN, *THE ECONOMICS OF REGULATION*, at 79 (2d ed. 1988). See also, Biddle & Steinberg, *Common Cost Allocation in the Firm*, in *COST ALLOCATION: METHODS, PRINCIPLES, AP-*

or overhead, which is not attributable to any particular service. There are several ways of performing this apportionment, or cost allocation. One way shared costs can be allocated is on the basis of relative shares of output, *e.g.*, relative shares of total minutes of use. Alternately, they can be allocated on the basis of relative shares of revenues. A third way is on the basis of relative shares of directly attributable costs.⁸⁷ Any allocation method chosen will not offer a unique solution to the problem of apportioning shared costs; hence, it is arbitrary.

FDC methods have been used in the telecommunications industry in a variety of ways. For example, they have been used or proposed to: "test" for cross-subsidies between the services offered by a telephone company;⁸⁸ set prices directly, as in the application of the Part 69 rules in the pricing of interstate carrier access services;⁸⁹ separate revenue requirements among the interstate and intrastate jurisdictions, as in the application of the separations process required by the Part 67 rules;⁹⁰ and separate shared costs between the regulated and the nonregulated activities of a telephone company, as provided by the FCC's *Joint Cost Order*⁹¹ or between basic and enhanced services, as provided by the FCC's *Computer Inquiry III* proceeding.⁹²

However, fully distributed costs are probably far too high, as computed in the telecommunications industry, to serve as the basis of prices used in a customer specific offer. Predictably, these are the very costs that market entrants want regulators to

PLICATIONS 31 (H.P. Young ed. 1985); Kahn & Shew, *Current Issues in Telecommunications Regulation: Pricing*, 4 YALE J. ON REG. 191, 206 (1987).

87. These methods of cost allocation are abstractions and simplifications of the complex accounting methods used in practice. Quite often, combinations of these three basic methods are used in allocating shared costs. Braeutigam, *supra* note 12; Cole, *supra* note 12.

88. See L.L. Johnson, *Competition and Cross-Subsidization in the Telephone Industry* (1982) (RAND Corporation Report) for a complete discussion of such proceedings. See also G. FAULHABER, *TELECOMMUNICATIONS IN TURMOIL: TECHNOLOGY AND PUBLIC POLICY* (1987); Breslaw, *Does Economic Theory Play a Role in Regulatory Decisions? The CRTC Cost Inquiry*, 64 LAND ECON. 372 (1988).

89. 47 C.F.R. § 69.1-612 (1986).

90. 47 C.F.R. § 67.1 (1986) (Now Part 36).

91. Separation of Costs of Regulated Telephone Service from Costs of Nonregulated Activities, Report and Order, 2 FCC Rcd 1298, 62 R.R.2d 163 (1987) [hereinafter *Joint Cost Order*]. The order established the current Part 64 rules.

92. Amendment of Sections 64.702 of the Commission's Rules and Regulations, 104 F.C.C.2d 958 (1986).